

P. LENGEMANN.
SHOE FOR FLAT FOOTED PERSONS.
APPLICATION FILED DEC. 8, 1910.

996,989.

Patented July 4, 1911.

Fig. 1.

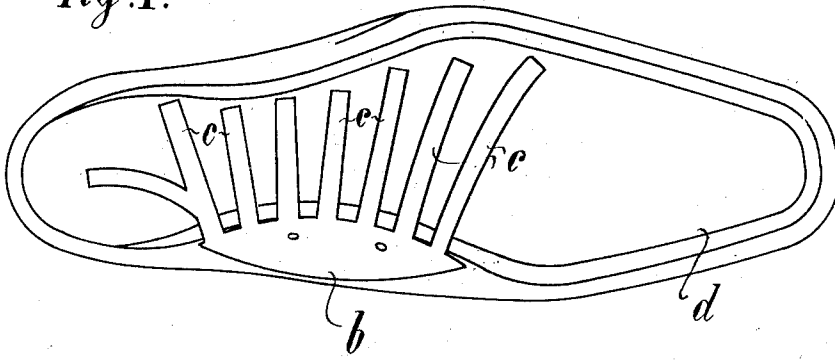


Fig. 2.

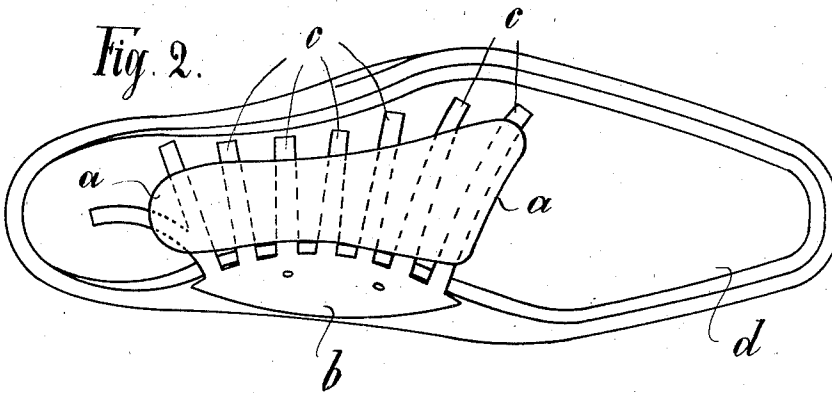


Fig. 3.

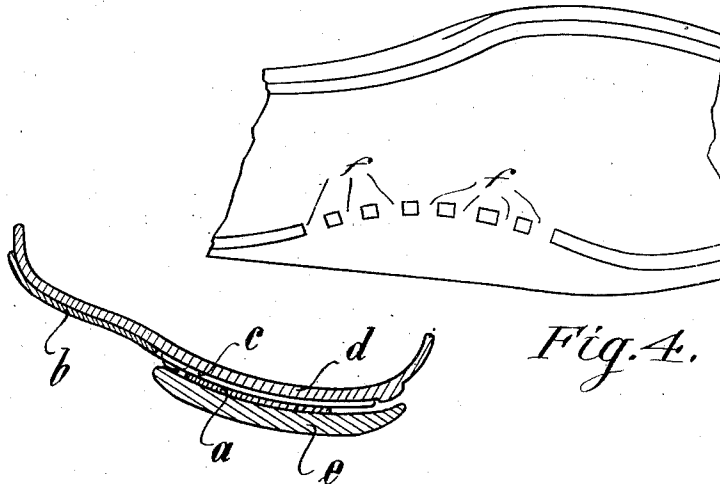


Fig. 4.

Witnesses

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SHOE FOR FLAT-FOOTED PERSONS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PAUL LENGEMANN, a subject of the Emperor of Germany, residing at Bremen, in the Empire of Germany, have invented a new and useful Improvement in Shoes for Flat-Footed Persons, of which the following is a specification.

This invention relates to shoes for flat-footed persons, in which the parts for supporting the arch of the foot are permanent and fixed elements and not removable inserted pieces; and, as also distinguished from such known forms of construction, the advantages of permanent support are combined with those of non-conspicuousness and elegance. For the purpose of enabling production to be effected on a large scale and so that the shoes for flat-footed persons can be easily fitted to particular individuals, the arch of the sole and the side curve of the foot are provided for as is well known by two independent supporting devices. The arch of the sole is obtained in the known manner by means of a wide spring plate situated under the insole, and which may be so stout and yet so arranged that its presence does not impart any awkward appearance to the shoe. A far more difficult task is that of cleverly arranging and forming the support for the side curve of the foot, and this is the special object of the present invention.

In the drawing Figure 1 represents the under side of the insole with supporting device *b* lying thereon for the side curve of the foot. Fig. 2 is a similar illustration with the supporting device *a* for the arch of the sole or foot in the direction of the line of its longitudinal center. Fig. 3 is a transverse section through the insole and the supporting device *a* lying between the insole and the outer sole or tread. Fig. 4 is a fragmentary bottom plan view of the insole, the supporting device and plate being removed therefrom.

For the purpose of clearness different dimensions are shown exceedingly large.

The essential feature of the invention is that the plate *b* provided for supporting the side-curve of the foot is held by a number of narrow stays *c*, which coming through between the different stitches in the edge of the insole *d* and outer sole *e* are arranged between these two. It has been found very practicable to form excisions in the reinforced insole, into which the stays *c* are let,

for the purpose of preventing any undesirable bulging out of the insole *d* or the formation of creases in the upper leather and injurious strain in the seam.

A really secure hold for the side curve of the foot is not obtained by different teeth or prongs projecting below the sole, but only by a solid plate adapted as far as possible to a proper shape of foot, and suitably made of sheet steel. This plate *b*, according to the invention is supported by a number of diverging stays *c*, which pass through between the different stitches in the insole. The divergence of the stays *c* requires different degrees of curvature for the different stays *c*, owing to which the plate *b* obtains greater support than if the curvature were equally great in all the stays. The principal cause of the satisfactory hold of the supporting device *b* is however the divergence of the stays *c* inasmuch as thereby the stays are prevented from slipping out or slipping in the gaps in the seams. In consequence of the spreading out of the stays *c* the supporting device *b* cannot be subsequently pushed into the gaps from outside, but must be inserted before the insole *d* and the outer sole *e* are stitched together. As is well known the insole *d* is thickened, in order that sufficiently strong leather material may be provided for stitching it to the outer sole *e*. By the interposition of the supporting device *b* however the sole would be too thick and awkward in places, if excisions *f* were not made in one of the ribs, which the said thickened portions provide, at the point of intersection with the stays *c*, into which excisions the stays *c* are let. The sole consequently, in spite of the insertion of the supporting device *b*, is not thickened, so that the shoe for the flat-footed person does not differ externally from ordinary shoes.

The supporting device *b* is held particularly secure in its right position if different stays are so formed that they extend partially below the heel and partially below the base of the small toe. As the bodily weight of a human being rests for the most part on these points in the sole, the stays *b* are clearly more firmly pressed down, than if the stays lay only below the less strained, softer middle part of the foot.

What I claim as my invention, and desire to secure by Letters Patent is:—

1. In a shoe, a supporting plate extending longitudinally of the shoe adjacent the arch

thereof and having a portion extending up on the inner side of the shoe, and diverging stays carried by the plate and disposed so that one of the stays is disposed beneath the heel of the shoe and another of the stays projects adjacent the base of the small toe of the wearer when the shoe is in use.

2. In a shoe, a plate for supporting the arch of the foot at the inner side thereof disposed adjacent the arch, and diverging stays carried by the plate and extending under the insole of the shoe, said insole having a reinforced stitching rib formed with openings to receive the stays, and means to secure the plate between the insole and outer sole.

3. In a shoe, a plate curved to conform-

ably engage the arch of the shoe at the inner side thereof and formed with a series of integral spaced stays which extend under the insole between the latter and the outer sole, the stays at one end of the plate extending toward the heel of the shoe and the stays at the opposite end of the plate extending toward the toe of the shoe on the outer side thereof.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PAUL LENGEMANN.

Witnesses:

FRITZ REUNCMANN,
KARL VARRELMANN.